A NEW SUPRAGENERIC CLASSIFICATION OF THE SCATOPSIDAE (DIPTERA: PSYCHODOMORPHA)[1]

Dalton de Souza Amorim[2]

ABSTRACT

The suprageneric classification of the Scatopsidae is revisited. A new classification for the group is proposed, based on the phylogenetic relationships between the genera of the family. All four recognized subfamilies are maintained. Anapausini *trib.n.* is proposed for *Anapausis* Enderlein, 1912 in the Psectrosciarinae. The tribe Colobostematini *trib. n.* is proposed for the genera *Ferneiella* Cook, 1985, *Cookella* Freeman, 1985, *Holoplagia* Enderlein, 1912, *Borneoscatopse* Freeman, 1985, *Lumpuria* Edwards, 1928, and *Colobostema* Enderlein, 1926, up to now placed in the *Scatopsini*. The concept of Scatopsini is restricted to the genera *Scatopse* Geoffroy, 1762, *Apiloscatopse* Cook, 1974, *Reichertella* Enderlein, 1912, and *Pharsoreichertella* Cook, 1974. Generic rank is proposed to *Pharsoreichertella* Cook, originally considered a subgenus of *Reichertella*. In the Rhegmoclematini, Diamphidicina *subtrib.nov.* is erected for *Diamphidicus* Cook, 1972; Parascatopsina *subtrib.n.* is erected for *Parascatopse* Cook, 1955, *Rhegmoclemina* Enderlein, 1936, *Austroclemina* Cook, 1972, *stat.n.*, and *Neorhegmoclemina* Cook, 1955, *stat.n.* These last two genera were included up to now as subgenera of *Rhegmoclemina*. The subtribe Rhegmoclematina is restricted to *Rhegmoclema* Enderlein, 1912, *Aldrovandiella* Enderlein, 1912, and *Parmaferia* Cook, 1976. *Aldrovandiella* is revalidated. The phylogenetic relationships among the subfamilies, tribes, subtribes and genera in the classification are indicated through a sequenciation system. The systematics of the genus *Rhexoza* Enderlein, 1936 still presents a number of problems affecting the whole tribe Swammerdamellini. Diagnoses are proposed for the new taxa.

KEYWORDS. Diptera, Psychodomorpha, Scatopsidae, systematics, classification.

INTRODUCTION

The Scatopsidae had the family category proposed by NEWMAN (1834), as "Scatopsites". The genera now maintained in Synneuridae (= Canthyloscelidae; =Corynoscelidae; =Hyperoscelidae; Hyperoscelididae) were placed in Scatopsidae until ENDERLEIN (1936) propose their inclusion in the subfamilies Synneurinae and Corynoscelinae of his family Corynoscelidae, earlier (ENDERLEIN, 1912) considered a subfamily of Scatopsidae, Corynoscelinae. At the end of the 40's, the classification of the Scatopsidae included the subfamilies Aspistinae, erected by RONDANI (1840) for *Aspistes*, and Scatopsinae itself.

More recently, Prof. Edwin F. Cook published a long list of papers revising the systematics of the family, describing species of all biogeographical regions, revising types and studying in considerable detail the morphology of the male and female terminalia of the group. COOK (1963) proposed a suprageneric classification for the

1. Partially produced under FAPESP grant 93/0954-9
2. Depto. de Biologia, FFCLRP, Universidade de São Paulo, Av. Bandeirantes 3900, 14040-901 Ribeirão Preto, SP, Brasil. Researcher of the CNPq.

group based on his previous studies of the family. He maintained the family-rank for "Hyperoscelidae" (COOK, 1963) and accepted Rondani's subfamily Aspistinae, adding to the Scatopsidae the subfamilies Psectrosciarinae and Ectaetiinae. In the subfamily Scatopsinae, COOK (1963) proposed the tribes Rhegmoclematini and Swammerdamellini. His classification for the family was maintained since then, except for minor changes on the placement of some genera (see COOK, 1981).

COOK (1963) based his classification on an extensive morphological knowledge of the group, but there was no hypothesis for the phylogenetic relationships among the genera of the Scatopsidae. In my Master's unpublished thesis (AMORIM, 1982b) I made a phylogenetic analysis of the Scatopsidae of the world, which resulted in a cladogram for the genera of the family based on 412 characters of head, thorax, wing, legs, abdomen, and male terminalia. The need of the new names on papers including systematic problems in the family (Sabrosky, **in litt.**; Haenni & Vaillant, **in litt.**) encouraged me to publish the classification in a paper apart, before the whole revison of the group, with about 200 figures of the adult morphology, in addition to an analysis of the female terminalia, is ready to be published.

A new suprageneric, phylogenetic classification for the Scatopsidae has been proposed, which differs from that of COOK (1963) on some aspects. A new tribe is proposed for the Scatopsinae, with the restriction of the concept of the Scatopsini, and subtribes are added for the Rhegmoclematini. In the Psectrosciarinae, the genera are placed in separate tribes, one of them erected herein. The knowledge about the phylogenetic interrelationships among the subfamilies, tribes and genera, not present in the earlier classifications, is expressed in the classification below. Generic status is proposed to *Pharsoreichertella*, established by COOK (1974) as a subgenus of *Reichertella*.

The systematics of the Swammerdamellini presents a number of difficulties, especially concerning the large genus *Rhexoza*. COOK (1975, 1978) partially solved this problem stating that *Coboldia* actually belongs to the Swammerdamellini (COOK, 1975) and creating new genera - *Quateiella* and *Akorhexoza* - for species that were earlier placed in *Rhexoza*. The genera *Pararhexosa* and *Abrhexosa* were proposed by FREEMAN (1985) for species previously assigned to *Rhexoza*. In fact, even after the erection of these new genera, the species included in *Rhexoza* compose a non-monophyletic assemblage inside the Swammerdamellini. A complete resolution of the systematics of the Swammerdamellini can be solved only with the erection of new genera in the tribe, the redefinition of some genera and the reassessment of the species. The genus *Rhexoza* is indicated as a merophyletic arrangement (*"Rhexoza"*) and for the time being the relationships among the genera in the Swammerdamellini is not proposed. The genus *Aldrovandiella* Enderlein, considered a junior synonym of *Rhegmoclema* Enderlein by COOK (1955), is herein revalidated.

Phylogenetic classification of the Scatopsidae

The following plylogenetic classification uses the sequencing convention of NELSON (1972), the **incertae sedis** convention of WILEY (1979) for taxa of doubtful position in the phylogeny, the square bracket convention of CHRISTOFFERSEN (1988) for redundant nominal taxa, and the group+ artifact of AMORIM (1982a) proposed for unnamed inclusive taxa in sequenced classifications. The definition of the new taxa

proposed is given below.

Scatopsidae Newman, 1834
- Aspistinae Rondani, 1840
  - *Aspistes* Meigen, 1818
  - *Arthria* Kirby, 1837
- Ectaetiinae Enderlein, 1936
  - *Ectaetia* Enderlein, 1912
- Psectrosciarinae Cook, 1963
  - Anapausini, **trib. n.** [*Anapausis* Enderlein, 1912]
  - Psectrosciarini Cook, 1963 [*Psectrosciara* Kieffer, 1911]
- Scatopsinae Newman, 1834
  - Rhegmoclematini Cook, 1955
    - Diamphidicina, **subtrib.n.** [*Diamphidicus* Cook, 1971]
    - Rhegmoclematina Cook, 1955
      - *Parmaferia* Cook, 1976
      - *Aldrovandiella* Enderlein, 1912, **revalid.**
      - *Rhegmoclema* Enderlein, 1912
    - Parascatopsina, **subtrib. n.**
      - *Parascatopse* Cook, 1955
      - *Rhegmoclemina* Enderlein, 1936
      - *Austroclemina* Cook, 1971, **stat. n.**
      - *Neorhegmoclemina* Cook, 1955, **stat. n.**
  - Scatopsini Newman, 1834
  - Scatopsini, **incertae sedis**, *Scatopse brevipalpis* Cook, 1956
    - *Scatopse* Geoffroy, 1762
    - *Apiloscatopse* Cook, 1974
    - *Reichertella* Enderlein, 1912
    - *Pharsoreichertella* Cook, 1974, **stat. n.**
  - Colobostematini, **trib.n.**
    - *Ferneiella* Cook **in** Freeman, 1985
    - *Holoplagia* Enderlein, 1912
    - *Cookella* Freeman, 1985
    - *Borneoscatopse* Freeman, 1990
    - *Colobostema* Enderlein, 1926
    - *Lumpuria* Edwards, 1928
  - Swammerdamellini Cook, 1972
    - *Pararhexosa* Freeman, 1990, **sedis mutabilis**
    - *Swammerdamella* Enderlein, 1912, **sedis mutabilis**
    - *Coboldia* Melander, 1916, **sedis mutabilis**
    - *"Rhexoza"* Enderlein, 1936, **sedis mutabilis**
    - *Hawomersleya* Cook, 1971, **sedis mutabilis**
    - *Akorhexoza* Cook, 1978, **sedis mutabilis**
    - *Quateiella* Cook, 1975, **sedis mutabilis**
    - *Abrhexosa* Freeman, 1990, **sedis mutabilis**

Psectrosciarinae Cook, 1963

Anapausini, trib.n.

The genus *Anapausis* is the only member of the tribe at this time. This is a rather large genus, including species with different morphology that could eventually be divided into formal groups. Differently from the Psectrosciarini, the dorsal half of the epimeron I is short. The male sternite 6 in the ground-plan of the genus has a deep incision almost dividing the sclerite into a pair of plates, a rather odd shape for sternite 6. The females present two rather striking features on the terminalia: the spiracles of 8 (lost in many members of the family) are near each other mesally on the tergite and the sternum 9 produces internally a pair of rounded, distinctive lobes. The male terminalia presents a number of very striking modifications. The tergum 8 is distinctly developed and sclerotized, fused to the tergite 9 and projected latero-posteriorly to the anus and the aedeagus has in virtually all species a "pseudopenis" projecting ventrally.

Scatopsinae Newman, 1834

Rhegmoclematini Cook, 1955
Diamphidicina, subtrib.n.

This subtribe includes a single genus, *Diamphidicina,* with two known species, *D. australis* Cook, 1971 and *D. chilensis* Amorim, 1989. The genus is very different from the remaining Rhegmoclematini species. The diagnostic features of the tribe are the presence of a short, typically shaped fork of M, the presence of a yellowish scutellum, setulae irregularly arranged on flagellomeres, no setae on posterior wing veins nor on wing membrane, and the absence of setae on the posterior half of the epimeron II. In *D. australis*, the females have the anal opening displaced anteriorly to the mid of the sintergal 8+9 plate and the cercus-like plates of tergum 10 fused to the sintergal 8+9 plate. The gonocoxites are ventrally fused to the sternum 9, which is well produced in both known species.

Parascatopsina, subtrib.n.

Generic rank is herein given to *Neorhegmoclemina* and *Austroclemina*, included by COOK (1971) as subgenera of *Rhegmoclemina*. These three genera sum with *Parascatopse* to compose this new subtribe. The species of the group are usually smaller than those of Rhegmoclematina, particularly those of *Parascatopse*, which are minute. The diagnosis of the subtribe includes the following features: no setae on posterior wing membrane nor on veins M, M_1, M_2, M_{1+2} and CuA_1, extensive coverture of microtrichia on pleural thoracic sclerites, a group of setae on the post-pronotal area, the second and third coxae present vertical incision on its dorsal margin due to a weaker sclerotization. In the Rhegmoclematina are kept the genera *Rhegmoclema, Aldrovandiella,* and *Parmaferia.*

Colobostematini, trib. n.

The genera in this tribe were previously included in the Scatopsini (see COOK, 1974). It includes the genera *Ferneiella, Holoplagia, Colobostema,* as well as *Lumpuria* Edwards (= *Villoscatopse* Cook), and the genera proposed by FREEMAN (1985, 1990), *Cookella* and *Borneoscatopse*. These groups are rather poorly represented in the Neotropical region and I have not been able to examine specimens of *Lumpuria* and of *Borneoscatopse*. The diagnosis proposed here may be subject to revision. Particularly, the position of *Borneoscatopse* must be considered provisional. Most species have the thorax rather short, about as long as wide and show the wing rather densely microtrichiose. The antepronotum and the scutum are rather densely covered with microtrichia in all genera except *Ferneiella.*

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